Our Club Rates are: **$1.90** for two copies (to the same or different post-offices); and for THREE or more copies, 90 cents each.

THOMAS G. NEWMAN,
EDITOR.

Vol. XXVIII. Aug. 20, 1891. No. 8.

Editorial Buzzings.

Do Not Risk the so-called honey-dew as Winter stores for your bees. In all probability it will be no better than grape juice and the like, and the natural result will be bee-diarrhea.

Bees Have Claws by which they can stick to a board upside down, explains Dr. Miller in *Gleanings*, but if it is glass the claws will not hold, and then an oily secretion of the foot allows them to stick. Wet the glass and the oily foot will not stick, and down comes your bee.

Prof. A. J. Cook says that he should expect no detriment from eating poisonous animals like centipedes. Even the venom of the rattlesnake or copper-head is harmless if taken into the stomach, though deadly if injected directly into the blood.

A Castle in Beeswax.—Among the entries at the Detroit Exposition this year, says the *Michigan Farmer*, is a castle, or cathedral, 32x8 feet in dimensions, with a tower 18 feet high, with a clock. The entire building will be constructed of beeswax and honey. This singular and very handsome structure will be one of the great attractions of the bee and honey department.

We fully intended to be present and see the structure, but we have an engagement in New Jersey at the same time, and must deny ourself the pleasure of meeting the friends and seeing the sights at the Detroit Exposition.

Paris Green, says a correspondent in the *Wisconsin Farmer*, is not only a dangerous poison to handle, but it is also injurious to the soil. Those who persist in using it upon the trees while in bloom, may yet find that it is like a two-edged sword, which cuts both ways.

T. A. Riggs, Brighton, Colorado, has one of the largest apiaries in that State—numbering 150 colonies. During July his bees averaged nearly 1,000 pounds of comb-honey per week. Some colonies exceeded 1,000 pounds. He is a happy man, and smiles while many others are dejected. Colorado is coming up, as a honey-producing State.

W. Lummel, Wisner, Nebr., has sent us a flower and desires to know what is its name. "It is a species of milkweed," says Prof. C. M. Weed, probably *Asclepias cornuti.*

A "Bee-Escape" is, in England, denominated a "super-clearer;" and a "hive bottom" is there called a "floor-board." An "alighting board" is there named a "flight-board;" and "apiarian supplies" are called "bee-appliances and bee-furniture." Why should there be such a difference in these names by an English-speaking race?

Colony or Swarm—Which?

The following is a reply to our article on page 72, on the above subject:

In my article, on page 72, on the above subject, I said that I never heard a good reason why I should change the word swarm (to represent bees in a hive) to the word colony. I have read carefully and re-read the criticism of my article, expecting to find a reason for the change, but I have looked in vain.*

After giving Webster's definition of swarm, as: "especially a great number of honey-bees which emigrate from a hive at once, and seek new lodgings under the direction of a queen; or a like body of bees united and settled permanently in a hive;" the editor says, "If the statement in the last line must settle the matter, how about the sentence preceding it, viz., that the bees 'seek new lodgings *under the direction* of a queen!' Does that *settle that matter, too?* Every well informed bee-keeper will dispute that assertion in the Dictionary!"

I cannot see that the error of belief in the office of the queen, has anything to do with the fact that bees in a hive were called a swarm. And if it invalidated the definition when applied to bees in a hive, it would invalidate it when applied to bees in the air; and, in fact, invalidate the whole Dictionary.†

The editor says, that the definition given to colony, as, "A number of animals or plants living or growing together," is the only one applicable to bees. Well, that does not mention bees. To be sure they are animals living together, and may be claimed as embraced in the definition. And as bees are not mentioned in defining colony, and as they are mentioned as being a swarm when in a hive, I claim that I have the case.‡

In the next paragraph I find the following sentence: "The use of the word swarm for colony cannot be justified by any rule of the language!" Is there any "rule of the language" that prohibits its use? Until a rule that prohibits it is cited I can see no reason why it is not perfectly proper to use it if one prefers. One other thing: The word swarm is not marked "obsolete," as is the case with many words.‖

Reading the criticism further, I find the following: "Because it was erroneously called a swarm in 'ye olden time,' no more proves its *correctness* or propriety, than when the only perfect female in the hive was called a *king*!"

What proof is there that it was, or is erroneous? That is the question under consideration. Proof is what is wanted. I have good authority on my side.

I will also quote the following language of the criticism: "A swarm issues from a hive for the purpose of increasing the families or colonies, but when it settles down to the business of house-keeping it is a colony, and not a swarm!"

Webster says it is a *swarm*. I have now done, and am willing to leave the case with the intelligent jury, which consists of the readers of this excellent periodical.

I believe in progression—eternal progression—and would not "set my face against the river's course," nor "butt at the storm with my puny form."

E. L. HOLDEN.

North Clarendon, Vt.

* Friend Holden seems to entirely mistake our argument. He quoted from Webster's Dictionary a sentence which had *two* errors in it; and, while he repudiated one error, he tried to prove his point by the other! In order to show the fallacy of such an argument we asked: "If the statement in the last line [which we claim to be an error] must settle the matter—how about the sentence preceding it?" [an evident error, admitted by all intelligent apiarists] and we asked: "Does it settle that matter, too?" This we now repeat, with emphasis.

The point is this: Is the Dictionary infallible? We emphatically say, no! and this we prove by *facts*, admitted by all intelligent apiarists—including Mr. Holden. Then we argue, that if it has made a mistake in one thing, it might have made an error in another—in fact, we claim that in the one sentence quoted by Mr. Holden, it has made two serious blunders. On either point its statement is worthless, and proves nothing!

† It is true that the erroneous statement made by the Dictionary about "the office of the queen" does not necessarily invalidate any of its other definitions, (much less the whole Dictionary,) but if one of its assertions is untrue, it cannot be deified with infallibility! And when it defines the word "swarm" to mean a

"body of bees, united and settled permanently in a hive," it contradicts not only itself but other lexicographers, and confounds the use and meaning of terms.

Worcester's Unabridged Dictionary defines the word "swarm" as "a cluster or great number of insects, or small animals, particularly of bees *migrating from the hive*."

In fact, our word swarm comes from the German word schwirren, and means "to whiz; to buzz; a tumultous mass." While the latter is applicable to a swarm, it is totally inappropriate when applied to an organized body of bees settled permanently in a hive, where order reigns! Tumult is disorder, noise and confusion—the opposite of contented, peaceful work.

‡ You must not be too fast, friend Holden, in claiming the case. That definition of colony—a number of animals living together—sweeps away all your props. The term "animal" *does include the bee*, as well as man; and hence is as appropriate to an organized body of bees living together, as an organized body of men and women. It is quite correct, proper, appropriate, precise, and faultless, to speak of either as a colony, when they have migrated from the parent home, and settled down in an organized body to keep house and work for the general good.

‖ It is unwarranted, and quite incorrect to claim that we must cite a "rule" to prohibit Mr. Holden from calling such a body of bees a "swarm." He might as well demand such a "rule" to prevent him from calling the only perfect female in the hive—*a king!* He could cite its use by the brightest of the Roman poets—and prove by books innumerable that it is right! No "rule" prohibits it!"

But there is no reason for prolonging this good-natured controversy. Enough has been said to convince "the intelligent jury" of the correctness of our position, and to our readers we leave the verdict—remembering that "when one is convinced against his will, he is of the same opinion still."

New Varieties of Bees.—On the subject of improving the honey-bee, and the introduction and acclimatization of desirable bee-forage plants, by the Department of Agriculture, and the work that the Department is now planning, with the advice and assistance of Prof. A. J. Cook, we find the following in *Insect Life*, which will furnish encouragement and food for thought to every intelligent bee-keeper in America:

While little attention has so far been given by the diffirent stations to the subject of apiculture (except at Lansing, Mich.) it is nevertheless an important branch of economic entomology, and there is much promise of good results yet to come from careful experiment and investigation.

One of the most inviting fields, is the search for and introduction of new varieties and species of bees; for just as American apiculture has profited in the past by the importation of races like the Italians, Syrians, and Carniolans, there is every prospect of further improvement by the study and introduction of such prominent races as are either known to occur or may be found in parts of Africa and Asia. *Apis dorsata* is believed to have many desirable qualities, and private efforts have already been made to introduce it, and have failed chiefly for want of means.

The further study of desirable bee-forage plants, and the introduction and acclimatization of such as are known to be valuable to parts of the country where they do not yet occur, are very desirable.

Much has yet to be done, also, in the line of systematic breeding, and we should be able to make rapid advances in the amelioration of existing races by proper selection, if we could assume practical and ready control of the fertilization of the queen.

In these directions we are now planning, with Prof. Cook's aid, some effective work, but the introduction of foreign bees, which the Department should be able to undertake to better advantage than any private individual or State institution, is rendered more difficult by virtue of the restrictions of the appropiation; and whatever is done in the other directions by the National Department will be done most advantageously through the co-operation of one or more of the State stations, many of which are far better equipped, and more favorably situated for apicultural work, than the Department at Washington.

The Section Press and Foundation Fastener, combined, mentioned last week on page 203, is made by Mr. W. O. Leach, Coldwater, Ontario. We herewith give an illustration of it, so that our readers may get an intelligent idea of its use and how to operate it. It is placed in our Museum for the inspection of visitors. Mr. Leach writes thus about it:

By its use I can put the foundation in the sections quicker, out of the flat, when

moistened, than I can after the sections are closed. To close the sections it has no equal for speed, after taking off the heater-plate attachment. After closing the section, relieve the treadle altogether, so as to bring it back to its starting place again.

It works to my complete satisfaction, and I use it every day, both for folding sections and fastening the foundation in them. One would hardly believe that it could save so much time, while handling the sections and completing them all at one operation. It requires but little practice to operate it quickly and successfully. W. O. LEACH.

Beeswax Bleaching.—Inquiries often come for information on the above. The following appeared in the New York *Voice* in answer to a query on the subject, and will be interesting to those who wish to know all about the bleaching of beeswax:

The commercial way of bleaching beeswax is as follows:

The wax is melted in a large tank, at the end of which is a wooden cylinder turned by hand, while the melted wax is running over it. The cylinder being half in cold water, and consequently always wet, causes the wax to flake off into the water; it is then put on large cloth screens supported by legs about half a yard high, and is put out into the light and air to bleach. After it has been out about a week, the same process is gone through again, and by another week or so it is white.

This can be done on a smaller scale by pouring the melted wax on the surface of warm water to form a thin sheet, and then putting it out on cloth to bleach; or another way is to put wax in cold water, let it come to boil, cool the water, and a thin sheet is formed on the water which is put out to bleach in the same way.

There is also a way to do it chemically, which I copy from a book which we have:

Heat wax to about 212° in an iron vessel lined with lead; add chloride of lime, either dissolved in water or dry, and stirred with a wooden spatula. When these materials have acted on each other long enough to discharge the color from the wax, the chloride of lime is removed by the addition of diluted sulphuric acid. The whole is then to be boiled until the alkali is separated. The solution of the chloride of lime in proportion of 20 pounds to 112 of water, and an equal quantity, by weight, of wax.

The sulphuric acid should be of the specific gravity of 1.8, and be diluted with 20 times its weight of water.

Egyptian Bees, found in Egypt, Arabia and Asia Minor, have yellow bands, and are smaller than Italians. Although they have long been domesticated in Egypt, where floating apiaries are common, they have been found to be vicious, by European bee-keepers who introduced them.—*Exchange.*

Honey Crop Predictions.—The following was sent for publication six months ago. We declined to publish *it then*, because we do not propose to become an instrument of discouragement to bee-keepers, on a very great uncertainty, when they had already experienced two or three years of failure. It was bad enough, if it must come, without the torture of anticipating it. We then wrote Mr. Wilson thus: "Your prediction is recorded here. If it becomes true then you can refer to it; if not, there will have been no harm done. If it were published and failed, there would be cause for disgust."

We now publish it, as promised on page 205 of last week's BEE JOURNAL. Mr. Wilson wrote thus:

I agree with A. N. Draper (page 124) as to the great advantage it would be (or is) to a bee-keeper to know five or six months in advance, what the honey harvest would be. But I doubt if you would believe me were I to say that I could tell you *now* whether we are to have a good flow next Summer or not. To convince you that I can tell, however, what the honey-flow will be, I will state to the bee-keepers of Illinois and Iowa, that without doubt basswood and white clover will prove entire failures in the States named. It does not matter how much bloom there is, it will yield no nectar.

In North Central Iowa, in the southeastern part of Franklin County, in northeastern Hardin County, in western Grundy County, and in the southwestern part of Butler County, they will have the best honey-flow from basswood and white clover of any part of the State, but not much there, and in the adjoining counties it will be better than in the remainder of the State.

In Illinois there will be a failure of white clover and basswood, except in the extreme southern part of the State, where there will be a good honey-flow, if it ever produces well in that part of the State.

It will be very easy for bee-keepers to foretell a failure of basswood and white clover, from five to seven months, when they know the true cause of its failure to furnish nectar. I have known for several years the cause of its failure, and time will prove the truth of my statement.

When the true cause of failure of the honey crop is known (which will be soon), we will know the amount of supers needed, and will also see the need of the divisible brood-chamber hive, for with that hive we can rear bees in abundance for a good season, or less for a poor season.

Then migratory bee-keeping will become more practical than ever, because bee-keepers will know where to take the bees.

All intelligent bee-keepers will learn before long that it is not electricity, thunder, cool nights, nor wind in a certain direction that causes the failure of basswood and white clover.

It is reported that Mr. Coe, of Windham, N. Y., is going to Colorado with his bees. He is probably disgusted at the recent failure of the honey crop; but he had better stay where he is, for there will be an exceedingly good honey-flow around Windham. SAMUEL WILSON.

Cosby, Tenn, Feb. 3, 1891.

If I will write out the cause of the failure of white clover and basswood to produce nectar, will you publish it? I desire to show that I am first to discover the cause of such failure. S. W.

Cosby, Tenn., July 28, 1891.

That is exactly what we desire Mr. Wilson to do—give us the facts upon which he based the foregoing prediction. If he will furnish us the information, as indicated in his proposition of July 28, we will cheerfully publish it, for the instruction and benefit of bee-keepers who are dependent on the white clover and basswood for their crop of white honey.

A Sample of yellow clover came from Mr. S. D. Booher, Danbury, Iowa, who wanted to know its name and value as a honey plant. Prof. Weed says that it is *Trifolium granarium*, and that it is probably a good honey producer.

A Honey Festival is the attraction up in Minnesota. In the Waterville *Advance* for August 5, we notice the following item:

The free honey festival for the children of Waterville, under 13 years of age, will occur on the 12th inst. for girls, and on the 13th for the boys, at 4 p.m., at my old residence. Others supplied at a nickel apiece. HONEY HASKIN.

The Latest Bee-Escape made by Mr. C. H. Dibbern, is illustrated on page 253. We intended to have inserted the engraving in the reading columns, as stated in our last issue, but Mr. Dibbern sent it, with an accompanying advertisement, and we were compelled to let it appear in the advertising department.

The interior arrangement may be seen through the wire cloth—for lack of better descriptive words in our last issue, we called it a "Chinese puzzle, or labyrinth," because the latter is defined as a place of intricate passageways. Now, every reader can examine and name it to suit his fancy. Mr. D. calls the Escape "The Little Giant"—quite expressive. The escape proper is 2⅛x5⅛ inches. We measured from outside to outside, when giving dimensions of it on page 203.

A Specimen of motherwort is sent by Mr. Joseph Mason, Wallace, Ill., stating that it is a great favorite with his bees, growing in waste places. He asks its name and value as a honey plant. Its botanical name is *Leonurus cardiaca*, and bees work on it from the time it commences to bloom until the last blossom withers. It produces excellent honey, in liberal quantities.

We Congratulate friend A. N. Draper upon the arrival of a bouncing boy, on August 2, as a regular boarder at his residence.

Queens are now cheaper than at any time during the year, and this is the best time to re-queen colonies, if new blood is desired in the apiary.

The Palsy or shaking disease, among bees, is again reported. It is also called "the nameless disease." To give the bees a new queen will usually cause it to disappear. Feeding the bees with salted water, in the open air, has been very successful in curing the disease.

Grubb's Patent (?) Frame.—In reference to this matter, mentioned on page 168, we have received the following testimonies:

I used the frame illustrated on page 168, some 15 or 16 years ago. The first foundation that came to this locality was bought by Mr. John H. Hodgkins and myself, and used in that kind of a frame. We discarded it, having obtained a better frame.—H. W. CONKLIN, Rockton, Ills.

Mr. John Klich, of LaCrosse, Wis., has been using a frame similar to the one illustrated on page 168 of the BEE JOURNAL, for the last 12 years, the only difference being that Mr. K. uses melted wax instead of the V-shaped piece of wood to hold the foundation in place.—C. F. LANG, LaCrosse, Wis.

Fourteen or fifteen years ago I used the same device as is illustrated on page 168 of the BEE JOURNAL, for holding foundation in place. I learned of it from Henry W. Conklin, of Rockton, Ill. How long he had used it previously, I do not know.—C. H. STORDOCK, Durant, Ills.

The Medal engravings were not ready in time for this issue of the BEE JOURNAL, but will appear next week.

Mr. Charles Dadant called at this office on the 12th inst., on his way to Sturgeon Bay, Wis., where he goes annually, to escape the hay fever. He was accompanied by his wife, and they will remain in Northwestern Wisconsin for several weeks.

The Honey Crop of E. France, Platteville, Wis., is not so bad—30,000 pounds.

☞The Springfield Exposition opens on Sept. 7, 1891. On Tuesday of that week the bee-keepers are requested to meet, at 1 p.m., at the office of the President of the Board, to formulate a programme for the annual meeting. The average attendance at the Fair for the past two years has been 50,000. There are hundreds of bee-keepers among them every day, and the above meeting should be largely attended.

Honey Crop in England.

The past few seasons have been discouraging, but this year the bee-keepers have reason for rejoicing, as will be seen by the following from the *Bee-Keepers' Record:*

It may be taken for granted that the honey-gathering for the present season is so far very satisfactory, and that a fairly good crop has already been secured; while, if the present fine weather continues for another week or ten days, the harvest for 1891 will be an excellent one. Reports continue to reach us of capital "takes" in a good many quarters, and a hopeful feeling seems to prevail everywhere, which is very gratifying after the depression caused by several bad seasons in succession.

Bee-keepers are, as a rule, sanguine men, and it unfortunately happens that persons of that temperament find it very hard to look on with stoical indifference while the rain is washing out the figures in which they have been reckoning up their honey gains, or while leaden clouds overhead darken their bright visions of sunshine and abundance of nectar, pictured in the near future. We have gone through all these phases of the bee-keeper's hopes—sometimes realized, and, truth to tell, not seldom disappointed—but we were never so impressed with the comparative "littleness" of the bee-man's interest at stake, when compared with those of the fruit-grower, as during our new experiences of the last few weeks.

We have seen hundreds of anxious men, women and children waiting for the sunshine and the consequent ripening of strawberries in the fields of Kent—the growers, also, equally anxious as themselves, with thousands of bushels of fruit ready for gathering "if the rain would but go off"—and we have felt very small indeed when thinking of our own "chafing" because of the enforced idleness of our few colonies of bees from the same cause.

And then, when a bright, warm morning made the air ring with the merry hum of the bees tumbling in, honey-laden, to the few hives we call our own, we have passed through the same fruit-fields, and seen such a sight! the bright green of the strawberry foliage darkened by the motley, busy crowd of "pickers," let loose by the sunshine, and gathering in the crop at "piece-work prices."

Broken down perambulators, wheeled under the shade of trees, were there by the dozen, containing babies of all ages, tugging away at empty feeding bottles, and tended mostly by an elder brother or sister, who had reached the mature age of three or four years. All members of the family beyond that age were busily picking.

It formed a curious and interesting scene to one unaccustomed to the extent of the fruit-farming industry in Kent, and, as we have said, it tended to subdue any disposition towards grumbling at the weather misfortunes a bee-keeper has to endure. Here were whole families of poor people who traveled weary miles to earn a few shillings in the fruit-fields, and while the weather was against them, they, like the bees, looked on and could do nothing.

But at last the sun shone on fruit-growers and fruit-pickers, on bees and bee-keepers, and all were made merry accordingly. Moreover, it is a fact that the honey of this year, like the fruit, is of capital quality and likely to sell well. A few days ago there appeared signs of mischief from an excess of honey-dew, but that trouble appears to have passed away, and the clover honey now being gathered is as good as was that from earlier plants a week or two ago.

There seems to be a general brightening up of the prospects of bee-keeping, not only by reason of a probable good harvest, but bees in poor health are feeling the benefit of a rapid inflow of natural food, which assists them in resisting premonitory symptoms of disease.

But besides this, there is cause for congratulation on all sides at the general prospects of the pursuit; bees have increased well by swarming, while swarms appear to be doing so well that few will have failed to gather sufficient natural stores to Winter on, and we congratulate our readers on the almost certainty of a good season. If confirmation of this view were needed, it comes in the very encouraging number of entries in the honey classes of the later shows now being held, and those still to come. When honey is plentiful, and of excellent quality, on the show tables, it is a reliable indication of general bee-prosperity so far as the season has gone.

We have not as yet had full reports of the prospects at the moors, but there is no reason why a successful heather season should not follow the splendid growing weather lately experienced. At any rate, northern bee-keepers are very hopeful of as good a time at the heather as we have been favored with in the South from fruit and clover, and we heartily wish them full supers, and plenty of them.

Queries and Replies.

Is Pollen Stored in Drone-Combs?

QUERY 780.—Do bees ever store pollen in drone-combs? If not, why not?—G.

Not to our knowledge.—DADANT & SON.

They do sometimes, but not often.—J. P. H. BROWN.

I think they do, though I am not sure.—J. M. HAMBAUGH.

I do not remember having seen pollen in drone cells.—H. D. CUTTING.

I do not know; let some one speak who does.—MRS. L. HARRISON.

I have never noticed any stored in such cells, but can give no reason for it.—C. H. DIBBERN.

I never thought of it before, but I do not now recollect of ever having seen any.—EUGENE SECOR.

Not usually. Perhaps because there are not usually such combs close beside the brood.—A. J. COOK.

Have never made any observations on this point, and fail to see a practical application for it.—G. L. TINKER.

I think they do, but I have not examined into the question so as to feel safe in a positive affirmation.—M. MAHIN.

Very seldom. The cells are so large that the bees cannot very well pack it so as to make it stay.—R. L. TAYLOR.

Certainly not often. I do not know why, unless because they never rear drones, except when they can get pollen fresh from the fields.—C. C. MILLER.

I have never known them to. As to why not? for a guess, I should say, because the main object of gathering it is to feed to the workers.—J. E. POND.

Yes, though not as much as in worker-comb. I do not know that I can tell why, unless the size of the cells renders it harder for the bees to make it stay there.—G. M. DOOLITTLE.

Bees follow laws peculiar to themselves. They gather pollen to feed to the young, and as the great bulk of their young is "workers" they store the pollen in worker-combs. To answer your question directly, I have not noticed pollen in drone or store-combs, but I am not sure that in all cases pollen is absent from drone-cells.—G. W. DEMAREE.

Very rarely. Because they do not have to, I guess. Either that, or it is none of our business. Can we get rich any faster when we find out? Perhaps because they can pack it better.—JAMES HEDDON.

Yes; but not often. Pollen is used for feeding the young, and as the workers greatly preponderate, it is probably more convenient when stored in the worker-combs. It may be that there are other reasons, but they are quite unimportant.—THE EDITOR.

Belle P. Drury is responsible for the following bit of bee lore: "The owner placed a small box on top of an old-fashioned hive, which the bees soon filled with honey. It was twice taken off, emptied and replaced. Lifted the third time, it was found that the bees had not attached the honey to the box at any place, but had built it up in a square shape on the top of the old hive."—*Rural Canadian.*

A Swarm of bees found a home in the walls of a Churdan, Iowa, millinery shop, and a large amount of honey was recently taken out.

Convention Notices.

☞ The Cortland Union Bee-Keepers' Association will hold its annual basket picnic at Little York, N. Y., on Tuesday, Aug. 25, 1891. All persons interested in bees and honey are cordially invited to attend. M. H. FAIRBANKS, Sec., Homer, N. Y.

☞ The ninth annual meeting of the Susquehanna County, Bee-Keepers' Association will be held on Thursday, Sept. 3, at South Montrose, Pa.
H. M. SEELEY, Sec., Harford, Pa.

☞ A meeting of the Illinois State Bee-Keepers' Association will be held at the fair grounds of the Sangamon Fair Association, Springfield, Ills., on Tuesday, Sept. 9, 1891, at 1 p.m., at the office of the President of the Board. The object of the meeting, among other things, will be to formulate a programme for our regular meeting. It is of the utmost importance that the programme prepared at this meeting should embrace our best talent, as it will furnish the material for the Report which the State has made provision for publishing.
By order of the Executive Committee.
JAMES A. STONE, Sec., Bradfordton, Ills.

☞ The Ionia Bee-Keepers' Association will hold its next meeting on Tuesday, Sept. 15, 1891, at Ionia, Mich. HARMON SMITH, Sec., Ionia, Mich.

☞ The Southwestern Wisconsin Bee-Keepers' Association will hold its next meeting on Wednesday and Thursday, Oct. 14 and 15, 1891, at Fennimore, Grant Co., Wis.
BENJ. E. RICE, Sec., Boscobel, Wis.

Topics of Interest.

Gaining a Victory Over Robber Bees.

G. M. DOOLITTLE.

It is said that writers give the bright side of bee culture more largely than the dark, which I am free to admit, for when in a happy mood we are more fluent talkers than when sad or perplexed. Just now I am perplexed and troubled with robber bees trying to get at every exposed comb when I open a hive, and that a little of the dark side may appear, with your permission, Mr. Editor, I will tell the readers of the AMERICAN BEE JOURNAL something about how robber bees bothered me a few years ago, and how at that time I "got the beatens" of them, and how this has helped me to have the best of them ever since.

If anything about bee-keeping makes me feel out of sorts, it is to have robber bees hovering all day long about every hive in the apiary that they think there is a possible chance of forcing their way into. The year I speak of, a little honey had been coming in slowly up to about August 1, when there was an entire stoppage in the secretion of nectar, so that there was nothing for the bees to do; while every day the heat was intense, which is just the time to put all the possible vim into a robber bee. Add to this the running of a queen-rearing business, in which I am sending out from 30 to 40 queens some days, and the reader will take in the situation.

The cover could not be taken off a nucleus before there was a host of marauders ready to pile in, so that, had it not been for the bee-tent (which, by the way, is a great help to any apiarist) I could not have done anything at all, except quite early in the morning and late at night, both of which times are very unpleasant to work with bees.

The bee tent would hold the robbers at bay while the hive was being opened and closed; but when the bees, kept outside by the tent, would flock in upon the removal of the same, in would go the robbers, then a fight would ensue, which, in some instances, would have resulted in a victory for the latter, had I not promptly closed the hives of some of the weaker nuclei.

After a little experience robbers become very cunning and determined. They will hover all day at the entrance of a nucleus or weak colony, from 2 to 10 at a time, and alight down with fanning wings as a tired bee would do after having been from home for a long time, and in this way get past the weary guards. Again, when some of the guards caught a robber, other robbers would catch hold of the robber also, and hold on, pulling back till the robber got away, when they would whirl around, as if looking for another robber, and run into the hive. In this way they would wear out the guards of these weak colonies, and keep me on the jump all the while.

Talk about the pleasures of bee-keeping when a man has to go on a jump from early morning till after dark, in the scorching sun the most of the time, with the mercury up to 90° or 95° in the shade; and add this robbing perplexity, and you will have something not *always* told about in our bee periodicals.

Well, there is a pleasant part of it after all, and that is what I wanted most to tell the readers about. The bright side again, you see. What was it that could make such a time bright and pleasant? Jut this: I beat the robbers! and I have been victor ever since. Winning a battle makes days of struggle and hard toil seem pleasant. From such a struggle, with victory, a satisfaction comes that cannot be had through ease and indolence: in fact, ease and indolence, if long continued, give no satisfaction at all. In watching, I often noticed that when a robber slipped by the outside guards into a hive, it would be led out by a bee from the inside of the hive.

This set me to thinking, the result of which was the fixing of every nucleus and weak colony as follows: Heretofore I had the entrance to the hives right direct onto the combs. To accomplish what I wanted to, when I opened a nucleus, I took the frame having the most honey in it and set it clear to the opposite side of the hive from the entrance, then the frame having the next most was put close to it, and the one having the most brood in it, last; having the frame with the most brood nearest the entrance, no matter how many frames the hive contained. I now drew up the division-board and closed the hive. This left the entrance on one side or end of the hive, while the nucleus or weak colony was on the other.

If a robber slipped by the outside and inside guards it now had to travel over considerable space, all along which were scattered guards ready to receive it. If it succeeded in getting by them through stratagem, it first came to the division-board, and if it got around that, the next

thing was a comb of brood better protected with bees than any other part of the hive. The result was, that although robbers still hovered around, yet not one colony when fixed in this way, has allowed a robber to obtain a load of honey, if there was sufficient bees to be called a colony or nucleus. Ever since this I have made the entrance to all weak colonies at one side of the hive, and keep the brood next the entrance, as previously spoken of, and to have a colony robbed, unless in early Spring, when there were so few bees and little brood that the bees made no effort at protecting the combs, has become a thing of the past.

Of course, if we persist in working with the bees without a tent when there is no honey in the field, and allow robbers to fill themselves with honey from the open hive, the bees may become so demoralized that all precautions will fail; but no one worthy of the name of apiarist will do such a thing. The would-be-robbers are unpleasant now, but I am master of the situation.

Borodino, N. Y.

Preserving Quality in Liquefied Honey.

PETER BOIS.

Under the ordinary plan of liquefying honey the product is sticky, somewhat like molasses, having thickened in melting. But more than this, it has lost part of that fragrant aroma and exquisite taste which it before possessed.

These important qualities can all be retained, almost, if not altogether, by a simple process; its extreme simplicity is, no doubt, one of the causes why it is not found out and used by those who have to re-liquefy honey. It consists in covering the honey about to be subject to water heat with half an inch of cold water. The crust and the whole of the acid portion, if any, on top of the granulated honey, should be removed previous to placing the cold water on. After melting there appears about the same quantity of water on top of the honey as when placed on at first.

When the honey is thoroughly melted, and has been allowed to cool down to a lukewarm condition, the water covering should be poured off by partly inverting the vessel.

It may be useful to state that the simple covering of water has no effect whatever on granulated honey that has already been melted without it.

Honey that was originally clear, and has become thick and cloudy by being melted without the covering of water, will not alter, if melted a second time with it.

Out of the several lots remelted for bottling I occasionally forgot to place the cold water covering on some, and as a result they were unfit for placing in the glass jars, for the reason previously stated. I therefore warmed them over again, previously adding the covering of water, but without effect. It was then that I seized the great importance of placing the cold water on the granulated honey previous to melting.—*British Bee Journal.*

Epilobium, or Fire-Weed.

JAMES HEDDON.

I note what Prof. Cook says regarding epilobium, on page 171, but I cannot see why it should ever be called "fire-weed." I suppose the reason for naming it fire-weed was because it grows almost exclusively on ground that had burned over the previous year. This is not at all the case with the epilobium, surely, for I find it plentiful all over Northern Michigan—up on the hills and down in the marshes and cedar swamps, where there is no evidence of fire ever having preceded it.

Gray's Botany tells us that this plant will not be found south of 43′ to 44′ north latitude, and so I have ever found it to be in this State until this year. A few weeks ago, as I was riding along the road a few miles northwest of this place, I was simply amazed to behold a group of these plants, all in bloom, a few rods from the road.

I called a halt, and picked one specimen, and, sure enough, it was the simon pure epilobium, and no mistake. A few days later I found another and much larger patch of this valuable honey-plant, about six miles northeast of our city.

Now, from whence did they come? Why did this plant lately prove false to Gray, and its old-time habits?

Do not forget that I am annually familiar with all the honey-plants, for miles in all directions, and, further, that having been so much interested in the epilobium, I would, and did surely discover its advent here. Perhaps not the first season of its existence in our county, but surely before it had been with us long.

I always think of the immortal Darwin, who said: "The more bees, the more

seeds; the more seeds the more plants; the more plants the more flowers; the more flowers the more bees," etc., or words to that effect.

I believe that we may look for the advent and rapid increase of new honey-plants, in any locality where plenty of honey-bees are kept. I know that the same has proven true with the spread of that best of all our honey-plants the pleurisy.

Of course, it pays fifty-fold for the outlay of time, etc., to get a few seeds of any plant which you think may thrive in your locality, and thus give it a start, when the bees will do the rest, provided the plant has those tenacious qualities without which no honey-plant is worth fussing with for honey alone.

I began about ten years ago to scatter seeds of such honey-plants as would hold their own against poor seasons, grass and weeds, in waste places, and the result is that the pleurisy and sweet clover are the stand-bys, and from them alone we now get a yield which keeps the bees from robbing, and at the same time gradually increases our surplus work, while previously we had a perfect dearth for about two weeks between basswood and buckwheat, boneset and golden-rod, etc.

It took time, but now that I am enjoying the benefits of the trouble and forethought of years ago, I am glad and proud of what I did.

What I read in Gray's Botany, years ago, about the epilobium, made me so sure that the plant would not thrive here, that I never scattered any of the seed, although now I wish I had. But after all, it may be that I would have made as many failures as attempts and that nature had scattered the seeds one thousand times, before one catch resulted.

Again, we are not forgetful that when once started by nature we can pretty safely count on a continuation of the plant even as far south as 42'. Prof. Cook can tell us, in classical terms, all the reasons.

I shall take my horse and buggy, and gather the seeds from these two patches of the epilobium (as it continues to bloom and produce seed all through this month) and look for more plants, if it takes all my time, for with this plant, in addition to the pleurisy and sweet clover, we will enjoy one endless surplus flow, from the beginning of June to the last days of August or to September 10.

I hope Prof. Cook will give us a good article on this subject, and correct any mistakes I may have made regarding the development of honey-plants.

Dowagiac, Mich., Aug. 6, 1891.

Bee-Keeping in Australia.

HENRY TURNER.

I used to look upon bees as very tiresome, stinging little things, and have occasionally found them so since I captured a swarm passing by, two years ago last December; anyhow, I only got one sting in taking them.

Three weeks later, wanting some advice, I applied to a friend some distance away. He examined the bees and told me there was no queen amongst them, but offered to help me until such time as I got my bees in working order. He brought me a frame of brood, but no queen was reared from it, nor was a second frame of brood more successful. He then brought a third frame with a sealed queen-cell, from which a very nice queen hatched out. I paid him 15*s*. for the queen. I then paid 14*s*. for a Langstroth hive for them, but by this time our Winter was at hand, and the bees had a good supply of honey, which my friend advised me not to take away till after the Winter had passed; and not till the following August did I carry out my first removal of surplus honey, up to December I had taken about seventy pounds. On looking at the bees a fortnight later, I found one frame nearly full of royal cells, two of which were sealed. I very foolishly destroyed all but one, and that one I put into a nucleus, thinking to get another swarm; but I reckoned without my host, for they flew away, so I was left worse off than ever, as I had destroyed all the other cells.

Three days later we had a number of wet days in succession, and the moth got into my nucleus and destroyed the royal cell, and nearly everything else in it. The combs were one tangled mass of web and grubs. What few bees were left I united with the old colony.

I then procured another queen, and clipped her wings, thinking this would prevent her wandering off, but after several attempts to clear out she got into the grass, and was there destroyed by small black ants. My friend, having no more queens for sale, offered to sell me a small colony for a pound note. I accepted the offer, thinking to unite the bees, but I found that the old colony was rearing more queens, and I did not disturb them.

Colony or Swarm—Which?

The following is a reply to our article on page 72, on the above subject:

In my article, on page 72, on the above subject, I said that I never heard a good reason why I should change the word swarm (to represent bees in a hive) to the word colony. I have read carefully and re-read the criticism of my article, expecting to find a reason for the change, but I have looked in vain.*

After giving Webster's definition of swarm, as: "especially a great number of honey-bees which emigrate from a hive at once, and seek new lodgings under the direction of a queen; or a like body of bees united and settled permanently in a hive;" the editor says, "if the statement in the last line must settle the matter, how about the sentence preceding it, viz., that the bees 'seek new lodgings *under the direction* of a queen!' Does that *settle that matter, too?* Every well informed bee-keeper will dispute that assertion in the Dictionary!"

I cannot see that the error of belief in the office of the queen, has anything to do with the fact that bees in a hive were called a swarm. And if it invalidated the definition when applied to bees in a hive, it would invalidate it when applied to bees in the air; and, in fact, invalidate the whole Dictionary.†

The editor says, that the definition given to colony, as, "A number of animals or plants living or growing together," is the only one applicable to bees. Well, that does not mention bees. To be sure they are animals living together, and may be claimed as embraced in the definition. And as bees are not mentioned in defining colony, and as they are mentioned as being a swarm when in a hive, I claim that I have the case.‡

In the next paragraph I find the following sentence: "The use of the word swarm for colony cannot be justified by any rule of the language†" Is there any "rule of the language" that prohibits its use? Until a rule that prohibits it is cited I can see no reason why it is not perfectly proper to use it if one prefers. One other thing: The word swarm is not marked "obsolete," as is the case with many words.‖

Reading the criticism further, I find the following: "Because it was erroneously called a swarm in 'ye olden time,' no more proves its *correctness* or propriety, than when the only perfect female in the hive was called a *king*!"

What proof is there that it was, or is erroneous? That is the question under consideration. Proof is what is wanted. I have good authority on my side.

I will also quote the following language of the criticism: "A swarm issues from a hive for the purpose of increasing the families or colonies, but when it settles down to the business of house-keeping it is a colony, and not a swarm!"

Webster says it is a *swarm*. I have now done, and am willing to leave the case with the intelligent jury, which consists of the readers of this excellent periodical.

I believe in progression—eternal progression—and would not "set my face against the river's course," nor "butt at the storm with my puny form."

E. L. HOLDEN.

North Clarendon, Vt.

* Friend Holden seems to entirely mistake our argument. He quoted from Webster's Dictionary a sentence which had *two* errors in it; and, while he repudiated one error, he tried to prove his point by the other! In order to show the fallacy of such an argument we asked: "If the statement in the last line [which we claim to be an error] must settle the matter—how about the sentence preceding it?" [an evident error, admitted by all intelligent apiarists] and we asked: "Does it settle that matter, too?" This we now repeat, with emphasis.

The point is this: Is the Dictionary infallible? We emphatically say, no! and this we prove by *facts*, admitted by all intelligent apiarists—including Mr. Holden. Then we argue, that if it has made a mistake in one thing, it might have made an error in another—in fact, we claim that in the one sentence quoted by Mr. Holden, it has made two serious blunders. On either point its statement is worthless, and proves nothing!

† It is true that the erroneous statement made by the Dictionary about "the office of the queen" does not necessarily invalidate any of its other definitions, (much less the whole Dictionary,) but if one of its assertions is untrue, it cannot be deified with infallibility! And when it defines the word "swarm" to mean a

"body of bees, united and settled permanently in a hive," it contradicts not only itself but other lexicographers, and confounds the use and meaning of terms.

Worcester's Unabridged Dictionary defines the word "swarm" as "a cluster or great number of insects, or small animals, particularly of bees *migrating from the hive.*"

In fact, our word swarm comes from the German word schwirren, and means "to whiz; to buzz; a tumultous mass." While the latter is applicable to a swarm, it is totally inappropriate when applied to an organized body of bees settled permanently in a hive, where order reigns! Tumult is disorder, noise and confusion—the opposite of contented, peaceful work.

‡ You must not be too fast, friend Holden, in claiming the case. That definition of colony—a number of animals living together—sweeps away all your props. The term "animal" *does include the bee*, as well as man; and hence is as appropriate to an organized body of bees living together, as an organized body of men and women. It is quite correct, proper, appropriate, precise, and faultless, to speak of either as a colony, when they have migrated from the parent home, and settled down in an organized body to keep house and work for the general good.

‖ It is unwarranted, and quite incorrect to claim that we must cite a "rule" to prohibit Mr. Holden from calling such a body of bees a "swarm." He might as well demand such a "rule" to prevent him from calling the only perfect female in the hive—*a king!* He could cite its use by the brightest of the Roman poets—and prove by books innumerable that it is right! No "rule" prohibits it!"

But there is no reason for prolonging this good-natured controversy. Enough has been said to convince "the intelligent jury" of the correctness of our position, and to our readers we leave the verdict—remembering that "when one is convinced against his will, he is of the same opinion still."

New Varieties of Bees.—On the subject of improving the honey-bee, and the introduction and acclimatization of desirable bee-forage plants, by the Department of Agriculture, and the work that the Department is now planning, with the advice and assistance of Prof. A. J. Cook, we find the following in *Insect Life*, which will furnish encouragement and food for thought to every intelligent bee-keeper in America:

While little attention has so far been given by the diffirent stations to the subject of apiculture (except at Lansing, Mich.) it is nevertheless an important branch of economic entomology, and there is much promise of good results yet to come from careful experiment and investigation.

One of the most inviting fields, is the search for and introduction of new varieties and species of bees; for just as American apiculture has profited in the past by the importation of races like the Italians, Syrians, and Carniolans, there is every prospect of further improvement by the study and introduction of such prominent races as are either known to occur or may be found in parts of Africa and Asia. *Apis dorsata* is believed to have many desirable qualities, and private efforts have already been made to introduce it, and have failed chiefly for want of means.

The further study of desirable bee-forage plants, and the introduction and acclimatization of such as are known to be valuable to parts of the country where they do not yet occur, are very desirable.

Much has yet to be done, also, in the line of systematic breeding, and we should be able to make rapid advances in the amelioration of existing races by proper selection, if we could assume practical and ready control of the fertilization of the queen.

In these directions we are now planning, with Prof. Cook's aid, some effective work, but the introduction of foreign bees, which the Department should be able to undertake to better advantage than any private individual or State institution, is rendered more difficult by virtue of the restrictions of the appropiation; and whatever is done in the other directions by the National Department will be done most advantageously through the co-operation of one or more of the State stations, many of which are far better equipped, and more favorably situated for apicultural work, than the Department at Washington.

The Section Press and Foundation Fastener, combined, mentioned last week on page 203, is made by Mr. W. O. Leach, Coldwater, Ontario. We herewith give an illustration of it, so that our readers may get an intelligent idea of its use and how to operate it. It is placed in our Museum for the inspection of visitors. Mr. Leach writes thus about it:

By its use I can put the foundation in the sections quicker, out of the flat, when

moistened, than I can after the sections are closed. To close the sections it has no equal for speed, after taking off the heater-plate attachment. After closing the section, relieve the treadle altogether, so as to bring it back to its starting place again.

It works to my complete satisfaction, and I use it every day, both for folding sections and fastening the foundation in them. One would hardly believe that it could save so much time, while handling the sections and completing them all at one operation. It requires but little practice to operate it quickly and successfully. W. O. LEACH.

Beeswax Bleaching.—Inquiries often come for information on the above. The following appeared in the New York *Voice* in answer to a query on the subject, and will be interesting to those who wish to know all about the bleaching of beeswax:

The commercial way of bleaching beeswax is as follows:

The wax is melted in a large tank, at the end of which is a wooden cylinder turned by hand, while the melted wax is running over it. The cylinder being half in cold water, and consequently always wet, causes the wax to flake off into the water; it is then put on large cloth screens supported by legs about half a yard high, and is put out into the light and air to bleach. After it has been out about a week, the same process is gone through again, and by another week or so it is white.

This can be done on a smaller scale by pouring the melted wax on the surface of warm water to form a thin sheet, and then putting it out on cloth to bleach; or another way is to put wax in cold water, let it come to boil, cool the water, and a thin sheet is formed on the water which is put out to bleach in the same way.

There is also a way to do it chemically, which I copy from a book which we have:

Heat wax to about 212° in an iron vessel lined with lead; add chloride of lime, either dissolved in water or dry, and stirred with a wooden spatula. When these materials have acted on each other long enough to discharge the color from the wax, the chloride of lime is removed by the addition of diluted sulphuric acid. The whole is then to be boiled until the alkali is separated. The solution of the chloride of lime in proportion of 20 pounds to 112 of water, and an equal quantity, by weight, of wax.

The sulphuric acid should be of the specific gravity of 1.8, and be diluted with 20 times its weight of water.

Egyptian Bees, found in Egypt, Arabia and Asia Minor, have yellow bands, and are smaller than Italians. Although they have long been domesticated in Egypt, where floating apiaries are common, they have been found to be vicious, by European bee-keepers who introduced them.—*Exchange.*

Honey Crop Predictions.—The following was sent for publication six months ago. We declined to publish *it then*, because we do not propose to become an instrument of discouragement to bee-keepers, on a very great uncertainty, when they had already experienced two or three years of failure. It was bad enough, if it must come, without the torture of anticipating it. We then wrote Mr. Wilson thus: "Your prediction is recorded here. If it becomes true then you can refer to it; if not, there will have been no harm done. If it were published and failed, there would be cause for disgust."

We now publish it, as promised on page 205 of last week's BEE JOURNAL. Mr. Wilson wrote thus:

I agree with A. N. Draper (page 124) as to the great advantage it would be (or is) to a bee-keeper to know five or six months in advance, what the honey harvest would be. But I doubt if you would believe me were I to say that I could tell you *now* whether we are to have a good flow next Summer or not. To convince you that I can tell, however, what the honey-flow will be, I will state to the bee-keepers of Illinois and Iowa, that without doubt basswood and white clover will prove entire failures in the States named. It does not matter how much bloom there is, it will yield no nectar.

In North Central Iowa, in the southeastern part of Franklin County, in northeastern Hardin County, in western Grundy County, and in the southwestern part of Butler County, they will have the best honey-flow from basswood and white clover of any part of the State, but not much there, and in the adjoining counties it will be better than in the remainder of the State.

In Illinois there will be a failure of white clover and basswood, except in the extreme southern part of the State, where there will be a good honey-flow, if it ever produces well in that part of the State.

It will be very easy for bee-keepers to foretell a failure of basswood and white clover, from five to seven months, when they know the true cause of its failure to furnish nectar. I have known for several years the cause of its failure, and time will prove the truth of my statement.

When the true cause of failure of the honey crop is known (which will be soon), we will know the amount of supers needed, and will also see the need of the divisible brood-chamber hive, for with that hive we can rear bees in abundance for a good season, or less for a poor season.

Then migratory bee-keeping will become more practical than ever, because bee-keepers will know where to take the bees.

All intelligent bee-keepers will learn before long that it is not electricity, thunder, cool nights, nor wind in a certain direction that causes the failure of basswood and white clover.

It is reported that Mr. Coe, of Windham, N. Y., is going to Colorado with his bees. He is probably disgusted at the recent failure of the honey crop; but he had better stay where he is, for there will be an exceedingly good honey-flow around Windham. SAMUEL WILSON.

Cosby, Tenn, Feb. 3, 1891.

If I will write out the cause of the failure of white clover and basswood to produce nectar, will you publish it? I desire to show that I am first to discover the cause of such failure. S. W.

Cosby, Tenn., July 28, 1891.

That is exactly what we desire Mr. Wilson to do—give us the facts upon which he based the foregoing prediction. If he will furnish us the information, as indicated in his proposition of July 28, we will cheerfully publish it, for the instruction and benefit of bee-keepers who are dependent on the white clover and basswood for their crop of white honey.

A Sample of yellow clover came from Mr. S. D. Booher, Danbury, Iowa, who wanted to know its name and value as a honey plant. Prof. Weed says that it is *Trifolium granarium*, and that it is probably a good honey producer.

A Honey Festival is the attraction up in Minnesota. In the Waterville *Advance* for August 5, we notice the following item:

The free honey festival for the children of Waterville, under 13 years of age, will occur on the 12th inst. for girls, and on the 13th for the boys, at 4 p.m., at my old residence. Others supplied at a nickel apiece. HONEY HASKIN.

The Latest Bee-Escape made by Mr. C. H. Dibbern, is illustrated on page 253. We intended to have inserted the engraving in the reading columns, as stated in our last issue, but Mr. Dibbern sent it, with an accompanying advertisement, and we were compelled to let it appear in the advertising department.

The interior arrangement may be seen through the wire cloth—for lack of better descriptive words in our last issue, we called it a "Chinese puzzle, or labyrinth," because the latter is defined as a place of intricate passageways. Now, every reader can examine and name it to suit his fancy. Mr. D. calls the Escape "The Little Giant"—quite expressive. The escape proper is 2⅛x5⅛ inches. We measured from outside to outside, when giving dimensions of it on page 203.

A Specimen of motherwort is sent by Mr. Joseph Mason, Wallace, Ill., stating that it is a great favorite with his bees, growing in waste places. He asks its name and value as a honey plant. Its botanical name is *Leonurus cardiaca*, and bees work on it from the time it commences to bloom until the last blossom withers. It produces excellent honey, in liberal quantities.

We Congratulate friend A. N. Draper upon the arrival of a bouncing boy, on August 2, as a regular boarder at his residence.

Queens are now cheaper than at any time during the year, and this is the best time to re-queen colonies, if new blood is desired in the apiary.

The Palsy or shaking disease, among bees, is again reported. It is also called "the nameless disease." To give the bees a new queen will usually cause it to disappear. Feeding the bees with salted water, in the open air, has been very successful in curing the disease.

Grubb's Patent (?) Frame.—In reference to this matter, mentioned on page 168, we have received the following testimonies:

I used the frame illustrated on page 168, some 15 or 16 years ago. The first foundation that came to this locality was bought by Mr. John H. Hodgkins and myself, and used in that kind of a frame. We discarded it, having obtained a better frame.—H. W. CONKLIN, Rockton, Ills.

Mr. John Klich, of LaCrosse, Wis., has been using a frame similar to the one illustrated on page 168 of the BEE JOURNAL, for the last 12 years, the only difference being that Mr. K. uses melted wax instead of the V-shaped piece of wood to hold the foundation in place.—C. F. LANG, LaCrosse, Wis.

Fourteen or fifteen years ago I used the same device as is illustrated on page 168 of the BEE JOURNAL, for holding foundation in place. I learned of it from Henry W. Conklin, of Rockton, Ill. How long he had used it previously, I do not know.—C. H. STORDOCK, Durant, Ills.

The Medal engravings were not ready in time for this issue of the BEE JOURNAL, but will appear next week.

Mr. Charles Dadant called at this office on the 12th inst., on his way to Sturgeon Bay, Wis., where he goes annually, to escape the hay fever. He was accompanied by his wife, and they will remain in Northwestern Wisconsin for several weeks.

The Honey Crop of E. France, Platteville, Wis., is not so bad—80,000 pounds.

☞The Springfield Exposition opens on Sept. 7, 1891. On Tuesday of that week the bee-keepers are requested to meet, at 1 p.m., at the office of the President of the Board, to formulate a programme for the annual meeting. The average attendance at the Fair for the past two years has been 50,000. There are hundreds of bee-keepers among them every day, and the above meeting should be largely attended.

Honey Crop in England.

The past few seasons have been discouraging, but this year the bee-keepers have reason for rejoicing, as will be seen by the following from the *Bee-Keepers' Record:*

It may be taken for granted that the honey-gathering for the present season is so far very satisfactory, and that a fairly good crop has already been secured; while, if the present fine weather continues for another week or ten days, the harvest for 1891 will be an excellent one. Reports continue to reach us of capital "takes" in a good many quarters, and a hopeful feeling seems to prevail everywhere, which is very gratifying after the depression caused by several bad seasons in succession.

Bee-keepers are, as a rule, sanguine men, and it unfortunately happens that persons of that temperament find it very hard to look on with stoical indifference while the rain is washing out the figures in which they have been reckoning up their honey gains, or while leaden clouds overhead darken their bright visions of sunshine and abundance of nectar, pictured in the near future. We have gone through all these phases of the bee-keeper's hopes—sometimes realized, and, truth to tell, not seldom disappointed—but we were never so impressed with the comparative "littleness" of the bee-man's interest at stake, when compared with those of the fruit-grower, as during our new experiences of the last few weeks.

We have seen hundreds of anxious men, women and children waiting for the sunshine and the consequent ripening of strawberries in the fields of Kent—the growers, also, equally anxious as themselves, with thousands of bushels of fruit ready for gathering "if the rain would but go off"—and we have felt very small indeed when thinking of our own "chafing" because of the enforced idleness of our few colonies of bees from the same cause.

And then, when a bright, warm morning made the air ring with the merry hum of the bees tumbling in, honey-laden, to the few hives we call our own, we have passed through the same fruit-fields, and seen such a sight! the bright green of the strawberry foliage darkened by the motley, busy crowd of "pickers," let loose by the sunshine, and gathering in the crop at "piece-work prices."

Broken down perambulators, wheeled under the shade of trees, were there by the dozen, containing babies of all ages, tugging away at empty feeding bottles, and tended mostly by an elder brother or sister, who had reached the mature age of three or four years. All members of the family beyond that age were busily picking.

It formed a curious and interesting scene to one unaccustomed to the extent of the fruit-farming industry in Kent, and, as we have said, it tended to subdue any disposition towards grumbling at the weather misfortunes a bee-keeper has to endure. Here were whole families of poor people who traveled weary miles to earn a few shillings in the fruit-fields, and while the weather was against them, they, like the bees, looked on and could do nothing.

But at last the sun shone on fruit-growers and fruit-pickers, on bees and bee-keepers, and all were made merry accordingly. Moreover, it is a fact that the honey of this year, like the fruit, is of capital quality and likely to sell well. A few days ago there appeared signs of mischief from an excess of honey-dew, but that trouble appears to have passed away, and the clover honey now being gathered is as good as was that from earlier plants a week or two ago.

There seems to be a general brightening up of the prospects of bee-keeping, not only by reason of a probable good harvest, but bees in poor health are feeling the benefit of a rapid inflow of natural food, which assists them in resisting premonitory symptoms of disease.

But besides this, there is cause for congratulation on all sides at the general prospects of the pursuit; bees have increased well by swarming, while swarms appear to be doing so well that few will have failed to gather sufficient natural stores to Winter on, and we congratulate our readers on the almost certainty of a good season. If confirmation of this view were needed, it comes in the very encouraging number of entries in the honey classes of the later shows now being held, and those still to come. When honey is plentiful, and of excellent quality, on the show tables, it is a reliable indication of general bee-prosperity so far as the season has gone.

We have not as yet had full reports of the prospects at the moors, but there is no reason why a successful heather season should not follow the splendid growing weather lately experienced. At any rate, northern bee-keepers are very hopeful of as good a time at the heather as we have been favored with in the South from fruit and clover, and we heartily wish them full supers, and plenty of them.

Queries and Replies.

Is Pollen Stored in Drone-Combs?

QUERY 780.—Do bees ever store pollen in drone-combs? If not, why not?—G.

Not to our knowledge.—DADANT & SON.

They do sometimes, but not often.—J. P. H. BROWN.

I think they do, though I am not sure.—J. M. HAMBAUGH.

I do not remember having seen pollen in drone cells.—H. D. CUTTING.

I do not know; let some one speak who does.—MRS. L. HARRISON.

I have never noticed any stored in such cells, but can give no reason for it.—C. H. DIBBERN.

I never thought of it before, but I do not now recollect of ever having seen any.—EUGENE SECOR.

Not usually. Perhaps because there are not usually such combs close beside the brood.—A. J. COOK.

Have never made any observations on this point, and fail to see a practical application for it.—G. L. TINKER.

I think they do, but I have not examined into the question so as to feel safe in a positive affirmation.—M. MAHIN.

Very seldom. The cells are so large that the bees cannot very well pack it so as to make it stay.—R. L. TAYLOR.

Certainly not often. I do not know why, unless because they never rear drones, except when they can get pollen fresh from the fields.—C. C. MILLER.

I have never known them to. As to why not? for a guess, I should say, because the main object of gathering it is to feed to the workers.—J. E. POND.

Yes, though not as much as in worker-comb. I do not know that I can tell why, unless the size of the cells renders it harder for the bees to make it stay there.—G. M. DOOLITTLE.

Bees follow laws peculiar to themselves. They gather pollen to feed to the young, and as the great bulk of their young is "workers" they store the pollen in worker-combs. To answer your question directly, I have not noticed pollen in drone or store-combs, but I am not sure that in all cases pollen is absent from drone-cells.—G. W. DEMAREE.

Very rarely. Because they do not have to, I guess. Either that, or it is none of our business. Can we get rich any faster when we find out? Perhaps because they can pack it better.—JAMES HEDDON.

Yes; but not often. Pollen is used for feeding the young, and as the workers greatly preponderate, it is probably more convenient when stored in the worker-combs. It may be that there are other reasons, but they are quite unimportant.—THE EDITOR.

Belle P. Drury is responsible for the following bit of bee lore: "The owner placed a small box on top of an old-fashioned hive, which the bees soon filled with honey. It was twice taken off, emptied and replaced. Lifted the third time, it was found that the bees had not attached the honey to the box at any place, but had built it up in a square shape on the top of the old hive."—*Rural Canadian.*

A Swarm of bees found a home in the walls of a Churdan, Iowa, millinery shop, and a large amount of honey was recently taken out.

Convention Notices.

☞ The Cortland Union Bee-Keepers' Association will hold its annual basket picnic at Little York, N. Y., on Tuesday, Aug. 25, 1891. All persons interested in bees and honey are cordially invited to attend. M. H. FAIRBANKS, Sec., Homer, N. Y.

☞ The ninth annual meeting of the Susquehanna County, Bee-Keepers' Association will be held on Thursday, Sept. 3, at South Montrose, Pa.
H. M. SEELEY, Sec., Harford, Pa.

☞ A meeting of the Illinois State Bee-Keepers' Association will be held at the fair grounds of the Sangamon Fair Association, Springfield, Ills., on Tuesday, Sept. 9, 1891, at 1 p.m., at the office of the President of the Board. The object of the meeting, among other things, will be to formulate a programme for our regular meeting. It is of the utmost importance that the programme prepared at this meeting should embrace our best talent, as it will furnish the material for the Report which the State has made provision for publishing.
By order of the Executive Committee.
JAMES A. STONE, Sec., Bradfordton, Ills.

☞ The Ionia Bee-Keepers' Association will hold its next meeting on Tuesday, Sept. 15, 1891, at Ionia, Mich. HARMON-SMITH, Sec., Ionia, Mich.

☞ The Southwestern Wisconsin Bee-Keepers' Association will hold its next meeting on Wednesday and Thursday, Oct. 14 and 15, 1891, at Fennimore, Grant Co., Wis.
BENJ. E. RICE, Sec., Boscobel, Wis.

Topics of Interest.

Gaining a Victory Over Robber Bees.

G. M. DOOLITTLE.

It is said that writers give the bright side of bee culture more largely than the dark, which I am free to admit, for when in a happy mood we are more fluent talkers than when sad or perplexed. Just now I am perplexed and troubled with robber bees trying to get at every exposed comb when I open a hive, and that a little of the dark side may appear, with your permission, Mr. Editor, I will tell the readers of the AMERICAN BEE JOURNAL something about how robber bees bothered me a few years ago, and how at that time I "got the beatens" of them, and how this has helped me to have the best of them ever since.

If anything about bee-keeping makes me feel out of sorts, it is to have robber bees hovering all day long about every hive in the apiary that they think there is a possible chance of forcing their way into. The year I speak of, a little honey had been coming in slowly up to about August 1, when there was an entire stoppage in the secretion of nectar, so that there was nothing for the bees to do; while every day the heat was intense, which is just the time to put all the possible vim into a robber bee. Add to this the running of a queen-rearing business, in which I am sending out from 30 to 40 queens some days, and the reader will take in the situation.

The cover could not be taken off a nucleus before there was a host of marauders ready to pile in, so that, had it not been for the bee-tent (which, by the way, is a great help to any apiarist) I could not have done anything at all, except quite early in the morning and late at night, both of which times are very unpleasant to work with bees.

The bee tent would hold the robbers at bay while the hive was being opened and closed; but when the bees, kept outside by the tent, would flock in upon the removal of the same, in would go the robbers, then a fight would ensue, which, in some instances, would have resulted in a victory for the latter, had I not promptly closed the hives of some of the weaker nuclei.

After a little experience robbers become very cunning and determined. They will hover all day at the entrance of a nucleus or weak colony, from 2 to 10 at a time, and alight down with fanning wings as a tired bee would do after having been from home for a long time, and in this way get past the weary guards. Again, when some of the guards caught a robber, other robbers would catch hold of the robber also, and hold on, pulling back till the robber got away, when they would whirl around, as if looking for another robber, and run into the hive. In this way they would wear out the guards of these weak colonies, and keep me on the jump all the while.

Talk about the pleasures of bee-keeping when a man has to go on a jump from early morning till after dark, in the scorching sun the most of the time, with the mercury up to 90° or 95° in the shade; and add this robbing perplexity, and you will have something not *always* told about in our bee periodicals.

Well, there is a pleasant part of it after all, and that is what I wanted most to tell the readers about. The bright side again, you see. What was it that could make such a time bright and pleasant? Jut this: I beat the robbers! and I have been victor ever since. Winning a battle makes days of struggle and hard toil seem pleasant. From such a struggle, with victory, a satisfaction comes that cannot be had through ease and indolence: in fact, ease and indolence, if long continued, give no satisfaction at all. In watching, I often noticed that when a robber slipped by the outside guards into a hive, it would be led out by a bee from the inside of the hive.

This set me to thinking, the result of which was the fixing of every nucleus and weak colony as follows: Heretofore I had the entrance to the hives right direct onto the combs. To accomplish what I wanted to, when I opened a nucleus, I took the frame having the most honey in it and set it clear to the opposite side of the hive from the entrance, then the frame having the next most was put close to it, and the one having the most brood in it, last; having the frame with the most brood nearest the entrance, no matter how many frames the hive contained. I now drew up the division-board and closed the hive. This left the entrance on one side or end of the hive, while the nucleus or weak colony was on the other.

If a robber slipped by the outside and inside guards it now had to travel over considerable space, all along which were scattered guards ready to receive it. If it succeeded in getting by them through stratagem, it first came to the division-board, and if it got around that, the next

thing was a comb of brood better protected with bees than any other part of the hive. The result was, that although robbers still hovered around, yet not one colony when fixed in this way, has allowed a robber to obtain a load of honey, if there was sufficient bees to be called a colony or nucleus. Ever since this I have made the entrance to all weak colonies at one side of the hive, and keep the brood next the entrance, as previously spoken of, and to have a colony robbed, unless in early Spring, when there were so few bees and little brood that the bees made no effort at protecting the combs, has become a thing of the past.

Of course, if we persist in working with the bees without a tent when there is no honey in the field, and allow robbers to fill themselves with honey from the open hive, the bees may become so demoralized that all precautions will fail; but no one worthy of the name of apiarist will do such a thing. The would-be-robbers are unpleasant now, but I am master of the situation.

Borodino, N. Y.

Preserving Quality in Liquefied Honey.

PETER BOIS.

Under the ordinary plan of liquefying honey the product is sticky, somewhat like molasses, having thickened in melting. But more than this, it has lost part of that fragrant aroma and exquisite taste which it before possessed.

These important qualities can all be retained, almost, if not altogether, by a simple process; its extreme simplicity is, no doubt, one of the causes why it is not found out and used by those who have to re-liquefy honey. It consists in covering the honey about to be subject to water heat with half an inch of cold water. The crust and the whole of the acid portion, if any, on top of the granulated honey, should be removed previous to placing the cold water on. After melting there appears about the same quantity of water on top of the honey as when placed on at first.

When the honey is thoroughly melted, and has been allowed to cool down to a lukewarm condition, the water covering should be poured off by partly inverting the vessel.

It may be useful to state that the simple covering of water has no effect whatever on granulated honey that has already been melted without it.

Honey that was originally clear, and has become thick and cloudy by being melted without the covering of water, will not alter, if melted a second time with it.

Out of the several lots remelted for bottling I occasionally forgot to place the cold water covering on some, and as a result they were unfit for placing in the glass jars, for the reason previously stated. I therefore warmed them over again, previously adding the covering of water, but without effect. It was then that I seized the great importance of placing the cold water on the granulated honey previous to melting.—*British Bee Journal.*

Epilobium, or Fire-Weed.

JAMES HEDDON.

I note what Prof. Cook says regarding epilobium, on page 171, but I cannot see why it should ever be called "fire-weed." I suppose the reason for naming it fire-weed was because it grows almost exclusively on ground that had burned over the previous year. This is not at all the case with the epilobium, surely, for I find it plentiful all over Northern Michigan—up on the hills and down in the marshes and cedar swamps, where there is no evidence of fire ever having preceded it.

Gray's Botany tells us that this plant will not be found south of 43° to 44° north latitude, and so I have ever found it to be in this State until this year. A few weeks ago, as I was riding along the road a few miles northwest of this place, I was simply amazed to behold a group of these plants, all in bloom, a few rods from the road.

I called a halt, and picked one specimen, and, sure enough, it was the simon pure epilobium, and no mistake. A few days later I found another and much larger patch of this valuable honey-plant, about six miles northeast of our city.

Now, from whence did they come? Why did this plant lately prove false to Gray, and its old-time habits?

Do not forget that I am annually familiar with all the honey-plants, for miles in all directions, and, further, that having been so much interested in the epilobium, I would, and did surely discover its advent here. Perhaps not the first season of its existence in our county, but surely before it had been with us long.

I always think of the immortal Darwin, who said: "The more bees, the more

seeds; the more seeds the more plants; the more plants the more flowers; the more flowers the more bees," etc., or words to that effect.

I believe that we may look for the advent and rapid increase of new honey-plants, in any locality where plenty of honey-bees are kept. I know that the same has proven true with the spread of that best of all our honey-plants the pleurisy.

Of course, it pays fifty-fold for the outlay of time, etc., to get a few seeds of any plant which you think may thrive in your locality, and thus give it a start, when the bees will do the rest, provided the plant has those tenacious qualities without which no honey-plant is worth fussing with for honey alone.

I began about ten years ago to scatter seeds of such honey-plants as would hold their own against poor seasons, grass and weeds, in waste places, and the result is that the pleurisy and sweet clover are the stand-bys, and from them alone we now get a yield which keeps the bees from robbing, and at the same time gradually increases our surplus work, while previously we had a perfect dearth for about two weeks between basswood and buckwheat, boneset and golden-rod, etc.

It took time, but now that I am enjoying the benefits of the trouble and forethought of years ago, I am glad and proud of what I did.

What I read in Gray's Botany, years ago, about the epilobium, made me so sure that the plant would not thrive here, that I never scattered any of the seed, although now I wish I had. But after all, it may be that I would have made as many failures as attempts and that nature had scattered the seeds one thousand times, before one catch resulted.

Again, we are not forgetful that when once started by nature we can pretty safely count on a continuation of the plant even as far south as 42°. Prof. Cook can tell us, in classical terms, all the reasons.

I shall take my horse and buggy, and gather the seeds from these two patches of the epilobium (as it continues to bloom and produce seed all through this month) and look for more plants, if it takes all my time, for with this plant, in addition to the pleurisy and sweet clover, we will enjoy one endless surplus flow, from the beginning of June to the last days of August or to September 10.

I hope Prof. Cook will give us a good article on this subject, and correct any mistakes I may have made regarding the development of honey-plants.

Dowagiac, Mich., Aug. 6, 1891.

Bee-Keeping in Australia.

HENRY TURNER.

I used to look upon bees as very tiresome, stinging little things, and have occasionally found them so since I captured a swarm passing by, two years ago last December; anyhow, I only got one sting in taking them.

Three weeks later, wanting some advice, I applied to a friend some distance away. He examined the bees and told me there was no queen amongst them, but offered to help me until such time as I got my bees in working order. He brought me a frame of brood, but no queen was reared from it, nor was a second frame of brood more successful. He then brought a third frame with a sealed queen-cell, from which a very nice queen hatched out. I paid him 15*s.* for the queen. I then paid 14*s.* for a Langstroth hive for them, but by this time our Winter was at hand, and the bees had a good supply of honey, which my friend advised me not to take away till after the Winter had passed; and not till the following August did I carry out my first removal of surplus honey, up to December I had taken about seventy pounds. On looking at the bees a fortnight later, I found one frame nearly full of royal cells, two of which were sealed. I very foolishly destroyed all but one, and that one I put into a nucleus, thinking to get another swarm; but I reckoned without my host, for they flew away, so I was left worse off than ever, as I had destroyed all the other cells.

Three days later we had a number of wet days in succession, and the moth got into my nucleus and destroyed the royal cell, and nearly everything else in it. The combs were one tangled mass of web and grubs. What few bees were left I united with the old colony.

I then procured another queen, and clipped her wings, thinking this would prevent her wandering off, but after several attempts to clear out she got into the grass, and was there destroyed by small black ants. My friend, having no more queens for sale, offered to sell me a small colony for a pound note. I accepted the offer, thinking to unite the bees, but I found that the old colony was rearing more queens, and I did not disturb them.

Things went on fairly well, though each lot took an occasional swarming fit. By this time another Winter had passed, and I still had my colonies, but both were very weak.

The Summer which is now drawing to a close, proved a fairly good one, for I have taken about seventy pounds of honey, and have increased from 2 to 5 colonies, 2 of which are strong, and the other fairly so. Then a stray swarm came past, which I secured, and I afterwards bought a beauty for 6s., so that I have now 7 colonies, of which I am very proud. My daughter has been a great help to me in my bee work this year.—*Bee-Keepers' Record.*

Queensland, Australia.

Apicultural Notes from Nebraska.

J. M. YOUNG.

The dry, hot weather of the last few days is very unfavorable for the secretion of honey; but then it is good weather for growing corn, which is very late and backward in this locality.

September is fair month, and will soon be here. Every bee-keeper should see that his apiary is represented at his county or State fair. Fairs are considered one of the best advertising mediums that can be found.

The question has been asked of me several times lately, why there is no surplus honey obtained in this vicinity this year. The only reason I can assign is that the nights are too cold. Last month is said to be the coldest July for years.

Those Hoffman frames, after they are filled and all stuck together, are not so easily handled after all, but notwithstanding this trouble they suit me better than any others, and I have concluded to use nothing else hereafter.

The *American Apiculturist* for August is at hand. The subject of the Punic bee is thoroughly discussed by friend Alley, and others, from every point. A great deal is claimed for these bees, and from what is said they are far in advance of any race in existence. I think I shall let friend Alley, and others, try them a while before I invest in any of them.

I do not care to have glass in the honey cases that are used on hives for surplus honey, as it is easier for me to examine from the top of the case than at the side. After the top is removed and the enameled cloth is drawn back at one corner, a better view of the sections is obtained than from any other point of the case, or hives. I use nothing but open-top sections.

Gloves and bee-veils, to protect the hands and face, are never used in my apiary. I do not want any gloves to bother me in handling frames or bees, or veils to obstruct my vision in working with hives. I will admit that I get stung sometimes, but if plenty of smoke is used many stings can be avoided.

I seldom open a hive without using smoke, or having it near at hand, to be used if necessary. Even in taking down swarms from tall trees, I have a hook attached to my smoker, and carry it right up with me and hook it over a limb to have it ready at a moments' warning. Sometimes this is not necessary, but when a person wants smoke, he wants it bad.

Plattsmouth, Nebr.

Cause of Sound Made by Flying Bees.

PROF. LEADER.

It is an opinion generally entertained that the noise produced by insects, such as honey-bees, during their flight, arises from the vibration or rapid motion of their wings.

Such a supposition is extremely plausible at first sight. We see the animal moving through the air; we know that the wings are in a state of rapid motion; and we also know that it is natural for a body vibrating in the atmosphere to cause a sound. We put all these facts together, and we conclude that the phenomenon is explained when we attribute the sound to the rapid waving of the wings. But, like many other hypotheses which owe their origin to the evidence of the senses alone, this appears to be erroneous.

The subject has been investigated with much ingenuity, and the conclusion arrived at is very diffierent from the common belief. We shall present a brief outline of the researches. They are not only interesting in themselves. but afford a good example of the manner in which scientific investigatious are pursued.

It has been found that the wings have no part in the formation of the sound, for the hum of the insect continues even when its wings are entirely cut away. There is, however, a different *pitch* of the sound, and it has been ascertained that the more of the wing there is taken away, the higher this becomes.

The sound which the insect emits is susceptible of considerable variations. It may be that it maintains an equality of pitch and strength during a uniform motion of the wings, for so in fact it appears; but every change in the velocity of the flight, every disturbance of the ordinary motion, generally causes also an alteration in the tone. An idea of the origin of the tone is, however, only to be obtained when the insect is held by the legs, and excited by pressure or other means to go through all its motions of the wing, and thus to produce a sound. It has been found in this manner that the tone of the common gadfly varied, as the effort to extricate itself was put forth with greater or less energy.

That part of the insect by which the sound alone is produced, is the breast or thorax. In two-winged insects, this consists simply of a cavity covered by thin membrane, which exhibits on its surface various elevations and depressions, but is, nevertheless, perfectly continuous. To this hollow case are attached different sets of muscles, which serve for the motion of the legs and wings, and are capable of contracting the cavity in various directions.

In this cavity of the insect's thorax there are two very small holes, which let air out or in by the following process: When the wings rise and fall, as in flying, the cavity is alternately contracted or expanded, the result of a peculiar mechanism on which the motion is dependent. Now, it is clear that the contraction must drive out a part of the air, just as a piper expels the air from the bag of his instrument by pressing his arm against it.

On the other hand, when the cavity of the insect is expanded by an opposite motion of the wing, an equal quantity of air rushes through the air-holes. There is, therefore, connected with the motion of the wings, a constant proportionally rapid and intense breathing, *and this breathing is the true cause of the sound.* It is the efflux and influx of the air which produces the buzz or hum which we hear, just as the current of air draws music from the Æolian harp, when forced at short intervals through the small holes of the sound-board, or, to take a more familiar example, by a mechanism similar to that of the mouth in whistling. The sound of the Æolian harp bears a remarkable resemblance to that of many insects.

Now, it is evident that this theory can be proved or disproved in a very satisfactory manner—namely, by closing up the air-holes of the thorax of the insect, without injuring it in any other way. This was done, and the flight of the gad-fly was found to be accompanied by no sound whatever.

It is true that the insect dies of suffocation soon after the experiment, but not directly, because there are air-holes situated lower down, in the abdomen of the animal, and through these respiration is continued for a short time. But they emit no sound during the flight of the insect, for they are then totally inactive. The insect breathes through the air-holes of the abdominal part when it sits and crawls, but through the air-holes of the thorax when on the wing. According to this view, the hum of insects is in reality a whistle.

Transferring Bees from Box-Hives.

DR. J. W. VANCE.

My friend, D. D. Daniher, has a method that he has found successful, and it is attended with very little trouble. He fills a movable-comb hive with empty combs, or frames filled with foundation, and places a board upon it with inch auger holes (four, perhaps), and moving the box-hive from its stand, places the new hive upon it and then lifts the old hive on top, over the holes, and closes the entrance to the box-hive, compelling the bees to go down through the new hive. Ere long the bees will take possession of the movable-comb apartment below.

This is an easy way to do it and not risk any stings; a method that will commend itself to the timid and inexperienced bee-keeper.

Another plan, and one chiefly adopted, is to drive out the bees by drumming and smoke, and with a chisel and hammer open one side of the box-hive and cutting out the combs fit them into the frames, fastening with small narrow sticks, tied top and bottom to the frame, which will hold the comb in place until the bees can fix everything up neat and nice; in two or three days the sticks and strings can be removed. Of course, the colony must be placed on the old stand.

If you have never done it yourself, perhaps you had better get an experienced bee-keeper to help or show you how.—*Wisconsin Farmer.*

Madison, Wis.

Clubs of 5 New Subscriptions for $4.00 to any addresses. Ten for $7.50.

CONVENTION DIRECTORY.

Time and place of meeting.

1891.

Aug. 25.—Cortland Union, at Little York, N. Y.
M. H. Fairbanks, Sec., Homer, N. Y.

Sept. 3.—Susquehanna County, at So. Montrose, Pa.
H. M. Seeley, Sec., Harford, Pa.

Sept. 9.—State Association, at the Fair Grounds, Springfield, Ills.
Jas. A. Stone, Sec., Bradfordton, Ills.

Sept. 15.—Ionia, at Ionia, Mich.
Harmon Smith, Sec., Ionia, Mich.

Oct. 14, 15.—S. W. Wisconsin, at Fennimore, Wis.
Benj. E. Rice, Sec., Boscobel, Wis.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of the time and the place of each future meeting.—THE EDITOR.

North American Bee-Keepers' Association

PRESIDENT—P. H. Elwood....Starkville, N. Y.
SECRETARY—C. P. Dadant.....Hamilton, Ills.

National Bee-Keepers' Union.

PRESIDENT—James Heddon..Dowagiac, Mich.
SEC'Y AND MANAGER—T. G. Newman, Chicago.

Bee and Honey Gossip.

☞ Do not write anything for publication on the same sheet of paper with business matters, unless it can be torn apart without interfering with either part of the letter.

But Little White Honey.

This is another poor season for bee-keepers in this section. So far, we have about one-fourth of a crop, with but little white honey. White clover blossomed profusely, but yielded but very little nectar. Prospects for a Fall crop are good. THOS. O. HINES.

Anamosa, Iowa, Aug. 8, 1891.

Golden Yellow Queens.

On page 52 of the BEE JOURNAL, Mr. Judkins states that he has a colony of bees which cast 12 swarms in 11 days. Now, I would like to know whether they were pint or gallon swarms. I saw a bee recently that was so heavy with wax scales that it was unable to fly, and the stinger protruded all the time. I re-queened some of my colonies this year, by inserting queen-cells, after destroying the old queens, and they all did well except one colony, to which I gave the third cell before securing a queen. Two of the young queens were lost on their wedding trip. I have some queens that are a golden yellow, except a little spot of black on the lower end of the abdomen, and one queen that is entirely yellow.

Greenville, Tenn. A. C. BABB.

Bees Have Not Done Well.

I have 45 colonies of bees, but they have done very poorly so far this year.

W. H. DUNCAN.

Lawrence, Kan., Aug. 1, 1891.

Preventing Dampness in Bee Cellars.

Will some one of the readers of the BEE JOURNAL inform me how to prevent dampness in a bee cellar, during the time the bees are confined therein? The cellar is 8 feet deep, with good, thick stone walls, and a cement floor. The ground around for quite a distance is perfectly level, and the soil is clay for a depth of six feet, and the remaining distance is in sand, and there is a mill race about 8 rods distant. Last Winter the cellar was so damp that the combs in the hives became somewhat mouldy, and when any of the bees died they would soon become mouldy, also, although the cellar is well ventilated. This cellar has cost its owner not far from $100, as it now is, and he does not feel like abandoning it, and building another. He, therefore, asks if there is not some way in which the evil may be remedied, without too great expense. He thinks that some of those who have had more experience than himself in such matters, can inform him how the desired end may be accomplished without much extra expense. CONSTANT READER.

Honey Crop a Total Failure.

There was a good honey-flow in May, and our bees swarmed excessively, some bee-keepers reporting as many as 3 or 4 swarms from one colony. With the beginning of June came cool, wet weather, and August found most of the bees in a starving condition. Not more than 25 per cent. of my bees cast swarms, and they are in fair condition. Cotton is now in bloom, and as the sun has been shining for a day or so, we hope that the worst is over. Our surplus is never much until the wild asters bloom in September, and if the weather is favorable, we may yet realize something. I see that the wide, thick, closed-end—self-spacing and almost self-acting—top-bar frame is still being discussed. I was the first to write anything like a lengthy criticism on this

frame, which Friend Root published in *Gleanings*. I fully indorse what Mr. Faylor says in the BEE JOURNAL—that this craze will yet hurt some unsuspecting novices. Let us go slow, and wait until the veterans have attained some results with it; then we beginners can take hold. A. L. BEACH.

Pineville, N. C., Aug. 4, 1891.

Caused by Poor Stores.

I lost a good colony of bees last Winter with the diarrhea. Please state the cause of the disease and a remedy in the BEE JOURNAL. C. LOWER.

Decorah, Iowa.

[Bee-diarrhea is generally caused by poor stores for Winter. If you had given that colony some well-ripened honey for Winter, you might have had it yet.—ED.]

Dark Honey.

My bees are doing very well. I sowed some buckwheat, and the bees are just beginning to work on it. Honey is all dark on account of so much honey-dew.

H. MANSPERGER.

Benbow, Mo., Aug. 9, 1891.

Black, Shiny Bees.

Early honey harvest is over, and although much better than last year, it is not what we expected. I have taken off 570 pounds of extracted, and 470 pounds of comb-honey of good quality. I have 68 colonies of bees in good condition for Fall bloom, which promises fair. In regard to those black, shiny bees, the two colonies that I mentioned (page 737) were so badly effected that they dwindled down so that about July 1 I united them, after having destroyed one of the queens; but still they dwindled until they were worthless, when I destroyed the other queen, and inserted a good queen-cell. The two queens that I destroyed were both fine looking and good layers, but the bees were so badly diseased that they would die before they were old enough to gather honey and pollen. It surely is a disease of some kind, and a very destructive one, too. If Prof. Cook, or any one else, knows anything about this disease, and a remedy for it, they will confer a great favor by giving it to the readers of the BEE JOURNAL. B. W. PECK.

Richmond Center, Ohio.

Wavelets of News.

Number of Drones Required in a Hive.

One drone for each queen is all that is really needed. All others are a surplus, and only live to make the colony poor in honey. All unnecessary drone brood should be cut out, and empty drone comb kept at the sides of the hive and always away from the center, for storing honey. When too great a quantity of drones fill the hive, it should be opened and most of the drones destroyed, or a drone-trap used.—*Exchange.*

Drone Colonies of Bees.

Occasionally a colony of nearly all drones is discovered. Now let us open one of these and see what we will find. Plenty of drones, with now and then a worker. The sealed cells of workers' comb stand high above the surface, and are very much scattered. There will soon be no more drones reared, for there will be no workers to feed them. If there is a queen she has never been fertilized, and every egg produces a drone. When a colony has been queenless a long time, some of the workers aspire to motherhood and lay eggs which produce drones. These bees have been improperly called fertile workers; better say laying workers. If such a colony is left alone, the moths will have the credit of destroying it, as drones cannot long exist without workers. When I find such a colony I give the combs to a swarm or use them in nuclei. —MRS. L. HARRISON, in *Prairie Farmer*.

Practical Hints to Beginners.

The most essential and necessary thing looking toward a good yield of comb-honey is a good season, combined with having the colonies you intend to use for this purpose strong in numbers early in the season.

To have the bees strong early in the season, each colony should be known to have a good fertile queen. As the season advances, you can help them by inserting an empty frame of worker comb into the brood-nest, between the brood combs; though never more than the bees can cover well, as this will spread the brood and induce the queen to greater activity.

In spreading the brood, if too many empty combs are inserted at one time, it will sometimes weaken, aye, even destroy,

a nice colony, if cold, rough weather sets in. Bees then concentrate, in order to keep up the necessary animal heat, and consequently the most outside brood will chill. Feeding them, although they have plenty of honey in the hive, will stimulate them much, so that they can stand the cold snaps better, which we often have in this climate duting the fore part of the season.

The best time to increase bees is when there is an abundant supply of natural forage, and colonies are very strong. Under any other circumstances it is dangerous. Sometimes it will work to take a comb of bees and brood from a hive about the first of June and let them work up to a colony by winter; but it is unsafe. Again, it will sometimes work very well to divide after the main honey crop is over, if they have honey enough for both colonies. However, June is the best time for increase, and by making each part strong, we run no risk of failure. —G. M. DOOLITTLE, in *Rural Home.*

Bee-Hives—Historic.

The Langstroth hive was invented in 1861 by America's great bee-keeper, a graduate of Yale and a very eloquent and learned divine—the Rev. L. L. Langstroth, now of Dayton, Ohio.

Nearly all American bee-keepers use this hive. In it frames, containing the honey comb and honey, hang on rabbets at the top of the end-board, so that, if accurately built, the combs may be easily and quickly lifted from the hive.

All hives with these hanging frames, no matter what the size and form of the frames, are Langstroth hives. Such hives are non-patentable, so the hives used by the most and best bee-keepers of America are free to all.

The Golden bee-hive, sold now in the South, is really a Langstroth. To sell "rights," as some men are doing, is rank imposture, and should be denounced.

The Dzierzon hive, invented by a very able bee-keeper of Germany, a Catholic priest, simply has bars at the top. This is a bar hive, and not a movable frame hive. Here the combs are fastened to the side of the hive and must be cut loose to be removed. I can hardly see how one who had ever seen a movable frame hive could possibly think for a moment of using a bar hive. Yet Dzierzon always clung to this hive.

The Huber hive consisted of frames of comb, the ends of which formed two sides of the hive. These opened like the leaves or covers of a book, and so permitted the great Huber to make his renowned and immortal discoveries.

The Quinby hive, now used by the Hetherington Bros., with their thousands of colonies, by Mr. Elwood and others, is a modified Huber hive. So is the shallow Bingham hive, which Mr. Bingham, one of our best bee-keepers, thinks the best in existence.

The new Heddon hive, perhaps the best for the expert bee-keeper, is also a modified Huber. Here the frames holding the comb are set in a close case and firmly held by thumbscrews.

To those who contemplate beginning bee-keeping I unhesitatingly recommend the Langstroth hive. If not the best, it is very excellent and has stood the test of long years of experience.—PROF. A. J. COOK, in the New York *Tribune.*

Bees Working on Red Clover.

We have noticed bees working on red clover this season more than usual, possibly because there is so much nectar in it as to be easily reached by the bees, for the heads are large and rank. Heretofore we have noticed them working on it most when dwarfed by dry weather.—*Western Bee-Keeper.*

Daily Average of Honey Gathered.

George W. Swink, a gentleman from the East, has located near Rocky Ford, Colo., and established an apiary, which he is running on business principles. He takes the weight of each hive at the beginning of the season, and keeps a record of the work done by each colony. The record of one colony from June 23 to July 6, this season, is interesting. The weight of the hive on the first-named date was 59½ pounds, including the honey in it. The daily yield of honey covering the period mentioned is given in the table below:

DATE.	HIVE WEIGHT.	HONEY.
June 24	68	8½
" 25	76¼	8¼
" 26	81½	5¼
" 27	89¼	7¾
" 28	96¼	7
" 29	102¾	10¼
" 30	113	6½
July 1	119	6
" 2	126¼	7¼
" 3	132	5¾
" 4	137¾	5¾
" 5	143½	5¾
" 6	148½	5

Thirteen days, total honey stored, 89

This is an average of 6.84 pounds of honey a day, to the hive. On June 30 the bees gathered 10½ pounds of nectar.

Another hive averaged 5.31 pounds, daily, for the same period. The Arkansas Valley, particularly that portion in Otero County, is becoming a great bee section, and has no superior as a honey field.—*Colorado Farmer.*

How to Tell When Bees will Swarm.

In passing through the yard the other day, one of the students asked how we could tell when a colony was going to swarm, and we remarked that it was a very difficult matter in some instances, while very easy in others.

On looking round we pointed over to a colony, perhaps 80 feet away, and said, "There is one that will swarm very soon." "How do you know?" was the reply; and we remarked: "Do you not see those two or three rows above the entrance, running up the hive, apparently biting with their mandibles, and backing down again? They move backward and forward, continually working their feet and their mandibles, or holding their heads down closely to the hive, and we have noticed them doing this same thing on the entrance board. One of our students once named it the bee-dance, or balancing to their partners."

While we were describing this to him, he said it was very plain if they would always do that, and there was no trouble in telling when to swarm. "Ah," we said, "you would have to watch them every day, because after they commence to do that, they are almost sure to swarm the same day, and will very seldom, if weather is favorable, wait till the next, and if they commence doing it in the morning before ten o'clock, you may usually look for a swarm before three.

"Well," he said, "that movement is distinct, and we shall never forget it," for while standing there the swarm issued. These bees that were doing the moving, back-and-forth, apparently did not know what was being done inside till the swarm had about one-third issued, then they turned round, as it were, and crawled back among the rest, and flew with them.

They appeared not to notice the commotion in the inside of the hive, and though they were going through with that peculiar performance, seemed to stop for half a minute, and then rushed pell-mell from the entrance.

In passing through the yard, this peculiarity should be watched, and you can often pick out the colonies just about to swarm, and by having everything in readiness, catch the queen.—*Canadian Bee Journal.*

Bees and Fruit.

Many farmers who grow a considerable quantity of fruit on their place, object to keeping bees because they feel convinced that the bees injure their fruit. I, personally, doubt very much if a bee ever injured fruit. They certainly suck the nectar from grapes, cherries, and other fruits, but not until they have already been punctured by birds or other insects. Punctured fruits will decay anyhow, and can never be gathered in a sound, wholesome condition.

The bees have been experimented with, time and again, and in all cases it was found that they never disturbed the fruit until the outside skin was first broken by other creatures. Fruit kept in the greenhouse, where the bees were allowed to fly around is never touched by them, but as soon as a few of them were broken open the bees swarmed around the spot. Orioles, robins, catbirds and other birds are generally the marauders, and the bees simply follow in their footsteps to prevent the nectar from going to waste. —ANNIE C. WEBSTER, in *American Cultivator.*

A Swarm Inside a Hobby-Horse.

It was at a pleasure resort where there were all sorts of amusements—swings, roundabouts, etc.

After the season is over the roundabouts are taken down and packed in an open shed. The wooden horses are hollow inside. The iron rods which are suspended from the roof, pass through the middle of the horses and are secured by a nut underneath. For convenience these rods are taken out when the horses are packed away, thus leaving an entrance to the space inside the horse. It was through this hole that the bees found their way in.

When the horses were wanted for use they were taken out of the shed and put together on the roundabouts. The horse with the bees in it was one of the center ones, and when the iron rod was put in it closed the entrance and the bees were imprisoned inside the horse. After a day or two they found a way out. The wooden plug which fastens the horse's tail in did not fit the hole tight, and by the side of this the bees made a new entrance. Meanwhile the horses were being used; but it was soon too warm a quarter for the visitors.

The men in charge of the horses stopped up the holes, but the bees managed to get through again and soon cleared the course, driving the visitors to

a safe distance which was a loss to the owner of the roundabout, so he sent word to a neighboring bee-keeper to come and destroy them. In lieu of that he took a hive, smoker and tools, and proceeded to remove them. First taking the horse off the iron rod and then his tail out, which left a hole about an inch in diameter, over which he placed a hive; then plugging up the hole in his back injected smoke into the hole on the under side and thus drove the bees out into the hive, which took about fifteen minutes. Then he made the tail-hole large enough to put one's arm through, and took out the comb. The inside of the horse was found to be quite full, though in shapeless mass caused by the horse going round. The bees did well afterward, apparently none the worse for having lived in a "horse."—*British Bee Journal.*

Yellow (?) Carniolans.

Some of the discussion upon the so-called "yellow Carniolans" reminds one quite forcibly of the bee journalism that has come and gone.

There is no doubt that yellow bees can be found in Carniola, but it has been explained how they came there, that they have intermixed with the yellow bees of Italy. The point is right here. Carniolans are a dark variety while Italians are yellow. To secure bees from just inside the border of Italy, bees that had received a dash of dark blood from an adjoining country, then breed out the yellow blood and sell the result as *black* Italians, would be exactly in line with what is being done with the Carniolans. That the bees sold as "yellow Carniolans" are good bees no one has expressed a doubt, that their immediate ancestors came to this country from Carniola may be equally true, but to call them typical Carniolans would be as absurd as to call an octoroon a typical African.—*Review.*

Detection of Paraffine in Beeswax.

A few grammes of the substance in fine air-dried shavings are gradually heated in a small porcelain capsule until fumes begin to rise. A half-liter wide-mouthed bottle is then inverted upon the capsule, and when filled with white vapors is closed and set aside until the fumes have condensed upon its walls. The sublimate is then dissolved in 3 c. c. of chloroform, the chloroform evaporated in a test tube, and the residue boiled with 4 c. c. of soda solution. If paraffine was present, it will, after cooling, be found floating on the clear solution. A drop of the chloroform solution may also be evaporated on a slip of glass and examined microscopically.

The fumes from pure beeswax are not so white as from paraffine, and are only obtained at a higher temperature (300°—320°). The sublimate gives a colored solution with chloroform and a colored and turbid solution with soda. The residue from the chloroform solution is a dull film; paraffine, on the contrary, gives separate grains in a clear field.—*Scientific American.*

Honey-Dew Plentiful.

While walking down street the other morning, we noticed damp looking spots on the sidewalk, and remarked at the time that it looked like the droppings of the *aphide*, or plant louse. The spots were under a thrifty, second-growth basswood tree, planted about eight years ago, the trunk eight or ten inches in diameter, with a large fine top.

We looked up among the leaves for some time to find the insects that were discharging the sweet substance, and at last, on the under side of a limb, we noticed a large number of insects clustered together, and covering the limb for a foot or more. They were so near the color of the basswood bark that it was difficult to see them. Taking a sheet of paper out of our pocket and holding it underneath the limb, we had before long a number of small drops on the paper. It was easy to see where the sweet substance was coming from, that was not only attracting the flies in large numbers, but also bees and wasps.

After examining this tree, we went to another, some distance away, and there found that more of the same liquid had dropped on the sidewalk in various places. The grass under the tree was quite sticky, and flies seemed to be doing a land office business, around these particular spots.

We have not had time to examine the trees in the woods, but feel satisfied that honey-dew is likely to be quite plentiful; and right here, let us say, in every locality as soon as the basswood flow is over, if you are extracting, take out all the honey that you intend to remove before it gets mixed with honey-dew.

In localities where Canadian thistles abound, no doubt large yields will be obtained from them, and the bees will be little inclined to work on honey-dew so long as the honey harvest is good from thistles or other flowers; but be exceed-

ingly careful not to allow any honey-dew to get mixed with the crop that you expect to sell, as it will very much injure the honey trade.

A gentleman who was watching our experiment asked why there were no blossoms on the tree. We could not tell him but simply knew that our second-growth trees have had no bloom on this year, or very little. We were wondering whether every basswood tree secreted a certain amount of sweet every year, whether the bloom was there or not.

This gentleman remarked that he thought, as there was no bloom, that these insects were sent to suck the honey out through the limbs of the trees, and discharge it where the bees could get it; but if that was the kind of honey we had to have for basswood honey in future, we would step down and out of that part of the business.—*Canadian Bee Journal.*

Benefit of a Cold Winter.

Such a Spring drought as we have had this year in many parts of Canada is unprecedented in the memory of "the oldest inhabitant." We usually have a dry spell in midsummer, but are seldom, in seed time, without sufficient rain to give the grain and grass a good start. But the present season has been remarkable in many localities for a long-continued Spring drought. In some parts of the country there was hardly a drop of rain from the middle of April to the middle of June, and this following a comparatively mild Winter, during which frost did not penetrate the soil to any great depth, made the long "dry spell" the more trying. When the frost goes to a considerable depth into the ground, it takes longer to thaw out, and there is a retention of moisture far on into the Spring. It is this which makes the climate of Manitoba and the Northwest favorable to the wheat crop. The frozen soil thaws very gradually, and is a reservoir of moisture for the growing crop, which it supplies with water by capillary attraction.

In the Northwest there are no Spring rains, and the water supply rises from the depths of the earth, instead of falling from the regions of the sky. The writer has seen excavations in Winnipeg during midsummer, out of which big chunks of frozen earth were taken to make room for the foundations of buildings. But in "old Canada," as it is sometimes called, frost is rarely found in the ground after the first of May, and this compensating advantage of a severe Winter is not present to mitigate the effects of such a drought as we have had the present year.—*Rural Canadian.*

Honey Vinegar from Cappings.

Drain all the honey that can be got from the cappings, which are then covered for an hour or two with water. The cappings from 1,000 pounds of honey will sweeten enough water for 45 gallons of vinegar. The water is drained into an open barrel which is kept covered with a cloth. The scum is removed as it rises. In about a year the change to vinegar will be completed.—*Exchange.*

Keep Honey-Dew for Spring Feeding.

A bee-keeper who lives in the woods of the Illinois River bottoms, called lately to inquire what he had better do with the honey-dew that his bees had stored. He said the brood-nests were filled with it, so that the queens could not lay. He had extracted from surplus cases about 1,500 pounds. It was dark stuff gathered from the secretions of an insect, living upon the oaks and hickories. Such a product may not be good food for bees to Winter upon, but for Spring feeding, would promote brood-rearing, and do no harm.—MRS. L. HARRISON, in the *Prairie Farmer.*

Removal. — Circumstances have made it to our advantage to remove to more commodious quarters, and we may hereafter be found at 199, 201 and 203 East Randolph Street—two blocks north and one block east of our former location. Previous to removal we occupied the fifth floor of a building, but we now occupy the *third* floor of a building near the corner of Fifth Avenue and Randolph Street. Our friends are always welcome.

When Writing a letter be sure to sign it. Too often we get letters with the name of the post-office, but no County or State. One such came recently, and we looked into the Postal Guide and found there were places by that name in 13 States. That order for goods will have to wait until another letter comes to give the proper address. Be sure to stamp your letter, or it may go to the dead letter office.

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